

ABSTRACT OF THE DISCLOSURE

A processor controlled charging platform/arrangement, and process using responsive charging of a battery as a function of internal resistance and environmental conditions of the battery are provided. Both voltage and temperature measurements can be used to determine the particular chemical state of a battery. Voltage data can be obtained by taking measurements across the battery terminals during the charge, and such data can be used to determine when charging is complete. Temperature data may also be obtained using thermal sensors placed on the surface or terminals of the battery, or utilizing sensors integrated into the battery. The charging platform/arrangement and process use a high current charge while the internal resistance of the battery is low, thus producing moderate heat, then self-adjusting to a lower intensity charge as internal resistance increases, so as to minimize the heat produced. As a result, the battery temperature can be kept at the battery's temperature limit, while maximizing the charging current.